

1 **ABSTRACT OF THE DISCLOSURE**

2 An optical antenna system for a free-space communication system
3 includes a fixed and an adjustable optical antenna assemblies. The fixed optical
4 antenna assembly includes a dual wavelength optical transmitter assembly and a
5 single wavelength receiver assembly. The dual wavelength optical transmitter
6 assembly includes a convex lens with a focal point and a dual wavelength optical
7 transmitter mounted at the focal point to produce a first and a second laser beam
8 with different wavelengths. The adjustable optical antenna assembly includes a
9 dual wavelength optical receiver assembly and a single wavelength transmitter
10 assembly. The dual wavelength optical receiver assembly uses an optical splitter
11 to direct the two laser beams respectively through two optical filters to an optical
12 alignment detector and an optical data detector. Thereby saving cost, size and
13 weight of the optical antenna system.